

BEFORE THE
POSTAL REGULATORY COMMISSION
Washington, D.C. 20268-0001

Statutory Review of the System)
For Regulating Rates and Classes) Docket No. RM2017-3
For Market Dominant Products)

DECLARATION OF JOHN KWOKA

(March 20, 2017)

I. QUALIFICATIONS AND SUMMARY

A. Qualifications

My name is John Kwoka. I hold the title of Neal F. Finnegan Distinguished Professor of Economics at Northeastern University, where I have been on the faculty since 2001. Prior to that time, I have held positions on the economics faculty at George Washington University and the University of North Carolina at Chapel Hill, as well as visiting faculty positions at Northwestern University and Harvard University. I have also had visiting positions at the Brookings Institution and the John F. Kennedy School of Government at Harvard. I earned my PhD in economics from the University of Pennsylvania.

My non-academic positions include positions at the Bureau of Economics of the Federal Trade Commission, at the Economic Policy Office of the Antitrust Division of the Justice Department, and as Special Assistant to the Director of the Common Carrier Bureau of the Federal Communications Commission (FCC). I am currently on the Board of Directors of the Industrial Organization Society and have previously served as President of the Industrial Organization Society, Vice President of the Southern Economic Association, and editor of the

Review of Industrial Organization. I am or have been on the editorial boards of several journals in my field.

My field of expertise is industrial organization economics--the study of markets and competition--with a focus on regulatory and antitrust policy. I have published more than eighty articles in leading journals as well as three books in the field. My book *The Antitrust Revolution*, co-edited with L.J. White, is a widely-used compilation of case studies of major antitrust proceedings. It is published by Oxford University Press and is now going into its seventh edition. My book *Mergers, Merger Control, and Remedies: A Retrospective on U.S. Policy*, is a research monograph published by MIT Press in 2015 that studies the effects of mergers and the effectiveness of merger control and remedies.

While at the FCC, I worked specifically on developing the price cap plans first for AT&T and then for the local exchange carriers (LECs), plans that went into effect in 1989 and 1991, respectively. The major challenge of that work was to convert the conceptual framework of price caps into an operational plan that would achieve the objectives of price caps while recognizing the numerous issues specific to the telecommunications companies to which it would be applied. These issues included identifying the appropriate price index and productivity offset, determining how to reflect changes in other costs borne by the companies, balancing various considerations in their discretion over individual prices, and setting out a review mechanism and time frame. Among my publications are two that outline the various analytical and practical issues encountered in implementing price caps in telecom.

In addition, I testified before the Subcommittee on the Postal Service of the House

Committee on Government Reform and Oversight concerning the Postal Reform Act of 1997.¹

Those hearings first explored the applicability of price caps for the Postal Service, and my testimony outlined both the standard considerations and some unique features raised by such an effort. Those hearings laid the foundation for what became the “modern system of rate regulation” embodied in the Postal Accountability and Enhancement Act of 2006. This Declaration revisits some of those issues as well as others that have affected performance of price caps for the Postal Service.

My full curriculum vitae is attached as Exhibit 1.

B. My Charge in This Proceeding

The present matter arises some ten years after the passage of the Postal Accountability and Enhancement Act (PAEA). On December 20, 2016, the Postal Regulatory Commission (PRC) issued an advance notice of proposed rulemaking in Docket No. RM2017-3 seeking comments on performance of the regulatory system governing market dominant products.²

The PAEA established a price cap plan for the market dominant products of the Postal Service. The plan provided for “an annual limitation on the percentage change in rates [for those products]...equal to the change in the Consumer Price Index for All Urban Consumers unadjusted for seasonal variation over the most recent available 12-month period.” Other provisions of the plan (a) specified that the rate making system was to maintain high quality service standards, (b) allowed rate changes in excess of the price cap in exigent circumstances, and (c) required a review of the sufficiency of the plan against a series of criteria, after ten years. 39 U.S.C. §3622.

¹ *To Reform the Postal Laws of the United States: Hearing on H.R. 22 Before the Subcomm. on the Postal Service of the H. Comm. on Government Reform and Oversight*, 105th Cong. 33-51 (1997) (prepared statement of John Kwoka, economics professor, George Washington University) (Kwoka Testimony-“Implementing Price Caps”).

² Docket No. RM2017-3, Advance Notice of Proposed Rulemaking on the Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products, December 20, 2016 (ANOPR).

Regarding this last provision, the PAEA requires the Postal Regulatory Commission to determine whether the existing “system for regulating rates and classes for market-dominant product...is achieving [its] objectives.” To the extent that this is found not to be the case, the PRC “may, by regulation, make such modification or adopt such alternative system...as necessary to achieve the objectives.” I have been asked by the Public Representative of the Postal Regulatory Commission to assess the performance of the PAEA’s price cap plan using generally accepted price cap principles as standards for my assessment. To the extent the existing plan is found deficient, I have been requested to recommend such changes or alternatives necessary to remedy the deficiencies.

C. Summary

Based on my analysis of the plan set out in PAEA and its operation over the past ten years, and based on my experience with these issues at the FCC and as an academic researcher into the economics of price caps, I conclude that the basic framework underlying the PAEA pricing plan is sound and capable of achieving its statutory objectives. I further conclude that certain factors have caused its operation to deviate significantly from those objectives. Finally, I conclude that certain straightforward adjustments to the plan, fully consistent with the underlying framework, would redirect the plan toward achievement of its intended objectives.

In what follows, I provide a brief review of the key elements of price caps in general, followed by a description of the PAEA plan that highlights certain distinctive features. Subsequent sections summarize my analysis of how those distinctive features have combined to diminish the effectiveness of the plan and what can be done to rectify the situation.

II. KEY ELEMENTS OF ALL PRICE CAP PLANS

The purpose of traditional regulation--rate of return/cost of service regulation— is to encourage production of goods and services with the cost and quality characteristics that would arise under competition, to ensure that those goods and services are priced efficiently while allowing the firm to break even, and to achieve this in the least burdensome way. To achieve these objectives, traditional regulation strives to set prices of the goods and services that the firm produces at the level of that firm's realized cost. That in turn requires investigation of those costs, together with constant review of any excesses or shortfalls of price relative to cost that would harm consumers or the firm itself. But this constant effort to bring price into conformity with cost, if successful, results in the quick recapture of any cost savings that the firm might achieve, leaving little to the firm for its efforts. As a result, the considerable effort required to implement traditional regulation in fact offers few incentives for the firm to lower costs. In addition it tends not to reward technological change and product improvements, and can create distortions in the production process. For all these reasons it has been disfavored among economists and policy makers.

Dissatisfaction with performance under traditional regulation has led to the development and implementation of incentive regulation in several industries in this country and others across the globe. Incentive regulation—or as I will call it in the present context, “price caps”—operates in a fundamentally different way. It seeks to harness the firm's natural profit-maximizing incentives to adopt best practices and lower its costs. The key to doing so is to break the tight connection between price and the firm's realized profit at any point in time, thereby strengthening its incentives to lower costs. It is easiest to see how this works in the extreme case

of truly fixed price. If the price that the firm can charge for a product is completely independent of its costs or profits, then the firm has the strongest possible incentive to reduce its costs since all cost savings flow directly into its accounts as profit. In contrast, if price gets adjusted according to costs or profits, the firm's incentive is correspondingly reduced. In fact, traditional regulation can be seen as striving for (though not necessarily achieving) the elimination of those very profits that are critical to inducing firm efficiency.

Equally importantly, of course, the fixed price must be set at a level that serves consumers' interests. These interests are for prices that, individually or collectively, are the lowest prices consistent with breakeven operation of the firm. That is, they must embody the least markup over cost possible, minimizing the firm's market power and harm to consumers. In addition, consumer acceptance of price caps generally requires that the resulting prices must not be higher than would be the case under traditional regulation.

The principles of price caps therefore sound fairly simple, yet all actual plans have to resolve several practical issues. Those are the subject of the next section of this Declaration.

A. Five Defining Features of Price Cap Plans

All price cap plans must address five key issues.³

First, how should price be initially set? While in theory any fixed price would present the firm with strong incentives, to achieve the purposes of a plan, price should be set at the average total cost of best practice operation. Average total cost covers both the variable and fixed costs, per unit, associated with on-going operation of the firm. This ensures that total revenues generated by expected sales at that price will cover total costs and thereby ensure breakeven

³ For much of this section on price caps in general, I rely on my article "Implementing Price Caps in Telecommunications," *Journal of Policy Analysis and Management*, 1993.

operation of the firm. Obviously higher prices will do so as well, but any higher price would produce windfalls to the firm at the expense of consumers. This breakeven price is the lowest price consistent with breakeven operation and thereby maximizes consumer benefit subject to that constraint.

In practice, price is often simply set at its existing level at the time of plan initialization. The logic of this choice is that the existing price is the level determined as appropriate by current rules or regulation, and so it represents something like good, if not necessarily best, practice. In addition, the existing price is a straightforward benchmark against which future gains can be measured: since that is the best that consumers had reason to expect under traditional regulation, any lower price is an unambiguous benefit. Moreover, if the alternative to taking existing price as the benchmark is a full-blown investigation to determine the “right” initial price, that would complicate matters greatly. Hence, unless there is something obviously incorrect about the existing price, the default approach is usually to adopt that for the launch of price caps.

Second, how should prices be maintained at an appropriate level when underlying costs change over time? In some cases, a price cap plan is intended to operate only for a year or two, in which case some plans simply freeze prices at their current level for that period of time. But a plan that leaves prices unchanged in the face of costs that rise or fall over time—as they surely will—results in the same windfalls or shortfalls that compromise plan objectives in the initialization of prices. Accordingly, price cap plans need to adjust the level of price to reflect changes over time in the economic factors that cause underlying costs to change. (As already explained, the plan must not simply adjust to the level of the firm’s realized costs since that would again eliminate its efficiency incentives.) Expected changes in costs of any product are due to changes in the prices of inputs (dollars per unit of input), the rate of productivity increase

(units of output per input), and any “exogenous” cost changes (those not under the control of the firm). Chosen and incorporated appropriately, these factors will predict future costs reasonably accurately and provide a continuously updated efficiency target for the company.

In practice, price cap plans typically use a broad price index such as GDDPI or CPI-U to capture input price changes, a productivity factor X deduced from economic studies of the firm or its industry or a similar industry, and one or more factors to capture exogenous cost changes. These latter are typically divided into a Y -factor for certain regulatory costs that are expected to be passed through dollar-for-dollar to consumer rates, and a Z -factor for other costs that the firm is responsible for covering but which are outside of its control. What distinguishes both Y and Z factors is that they are exogenous to the firm and so are not subject to efforts at efficiencies. As a result they must be held separate from the efficiency-driven part of the plan. These considerations yield the common characterization of price cap plans as “ $\Delta PI - X + Y + Z$,” that is, prices that change with the rate of change of some broad price index net of productivity gains but reflecting exogenous cost factors (all expressed in percentage terms).

Third, when and how should the price cap regulator intervene to reset the price when the pricing formula yields results that diverge from actual underlying costs? Since the formula is only a prediction of cost, divergence is inevitable and indeed likely to be larger when the plan operates over longer periods of time. Small and random divergences are likely to average out, but those that are large and persistent once again result in either windfall profits to the firm that violate the regulatory objective of protecting consumers, or financial losses that jeopardize its ability to survive. On the other hand, intervention that too frequently and thoroughly adjusts price to realized profits or costs starts to resemble traditional cost-of-service regulation and just as that regulation did, undermines the very incentives at the heart of the plan.

Accordingly, most price cap plans provide for a review or reset on a four or five year cycle--long enough to preserve incentives but short enough to catch deviations of price from underlying costs before those deviations escalate and jeopardize the plan itself. The stated criteria for these reviews vary. They often set out several criteria, not just price-cost divergences, in order to avoid the sense that they seek to do what traditional regulation does, only on a delayed basis.⁴

Fourth, how are individual service prices to be determined under price caps? Since all regulated firms have numerous services and prices, capping each one would be enormously burdensome and impractical. Instead, the standard practice is to cap a weighted average of such prices, or alternatively, a weighted average of prices within each of a small number of groups or classes of similar services. In principle, the firm might be permitted to set individual rates at any level it chooses, subject only to the constraint of the weighted average. In practice, that might lead to large and rapid price changes that are unnecessarily harmful to consumers, or that permit strategic pricing practices that harm competition. To address these possibilities, most plans have secondary pricing limits within the weighted average, limits designed to blunt any harm to consumers and competition, but without ultimately preventing the firm from moving prices toward their efficient levels.⁵

Fifth, how is service quality to be preserved? Price caps are intended to motivate the firm to lower costs through operating efficiencies, but the same incentives can cause the firm to reduce costs by lowering service quality. Either will result in greater profit. With their focus on

⁴ The FCC's price cap plan for AT&T, for example, was to "consider all available measures of market and carrier performance, including, but not limited to, actual prices, achieved rate of return, quality of service, and technological progressiveness." FCC Report and Order, CC Docket 87-313, March 1998, at para. 561.

⁵ These are discussed in Kwoka, 1993, pp. 734-738.

the relationship between price and cost, price cap plans lack any inherent mechanism to preserve or enhance service quality even if desired by consumers. Complicating matters further, quality itself and consumers' preferences for quality are much more difficult to measure than with respect to price. Left unchecked, some—but not all—evidence suggests that quality erosion may well occur under price caps.⁶

While this possible concern with price cap plans has long been noted, also recognized is the fact that some constraints may exist on the degree to which a firm might lower quality. These include adverse consumer responses to lower quality—that is, demand fall-off--and perhaps some reactions from rivals who seize a competitive advantage. Most plans are also accompanied by some further administrative or institutional protections for quality. These may take the form of service quality standards, reporting requirements, or administrative oversight of service quality.⁷ A few price cap plans have gone farther and introduced more formal reward/penalty mechanisms with respect to quality or even attempted to integrate quality standards directly into the price cap formula so that the firm's allowed pricing reflects its achievement with respect to quality.⁸ These latter efforts have proven difficult, given the

⁶ See D. Kridel et al, "The Effects of Incentive Regulation in the Telecommunications Industry," *Journal of Regulatory Economics*, 1996; T. Roycroft and M. Garcia-Murillo, "Trouble Reports as an Indicator of Service Quality," *Telecommunications Policy*, 2000; M. Clements, "Local Telephone Quality of Service," *Telecommunications Policy*, 2004; D. Sappington, "The Effects of Incentive Regulation on Retail Telephone Service Quality," *Review of Network Economics*, 2003; and "Incentive Regulation, Service Quality and Standards in U.S. Electricity Distribution," A. Ter-Martiroyan and J. Kwoka, *Journal of Regulatory Economics*, 2010.

⁷ The UK electricity regulator used engineering studies to develop benchmarks for reliability of distribution services. Office of Gas and Electricity Markets, "Electricity Distribution Price Control Review," London, 2004. In the U.S. 23 of 40 state public service commissions have in the past monitored and required reporting on electricity reliability. Thirteen states had formal standards, and seven had explicit penalties and rewards. National Regulatory Research Institute, "State Public Service Commission Reliability Survey," 2001.

⁸ The UK electricity regulator has established benchmarks for transmission service, but also instituted a system of rewards and penalties when outages exceeded some maximum frequency. Office of Gas and Electricity Markets, "Electricity Transmission Network Reliability Incentive Scheme," London, 2004. New Zealand, Netherlands, and Argentina are also said to have such systems. P. Joskow, "Incentive Regulation and Its Application to Electricity Networks" *Review of Network Economics*, 2008.

obstacles to measuring the actual quality or the quality that might be preferred.⁹

While many price cap plans also need to address certain other issues,¹⁰ most plans can be defined and distinguished by how they treat these five major matters.

B. Experience with Price Caps in Practice

There now is a considerable body of experience with price caps in several industries, both in the U.S. and elsewhere. These industries include telecom (long distance, and, separately, local service), electric (transmission, and also distribution), water, gas, and others. Many assessments of their performance now exist, and while both the plans and their assessments differ in detail, overall it is fair to say that price cap plans have generally been found successful. For example, the FCC's assessments of the price caps for AT&T and separately for the local exchange carriers reported that to be the case.¹¹ Consistent with this evidence, traditional regulation has increasingly been replaced by price caps, and few if any new regulatory initiatives have opted for cost-of-service regulation.

Three issues with these new price cap plans are especially relevant here. First, while most price cap plans have gone into effect smoothly, some have been observed to diverge from their objectives. These divergences have been due to changed circumstances, defects in plan design, or incorrect values of key parameters.¹² In such cases, apart from the need to periodic longer-term review, it is important for any new plan to be able to revisit the plan's performance

⁹ "Service Quality Regulation for Detroit Edison," Pacific Economics Group Report, 2007.

¹⁰ These other issues include provisions for dealing with newly introduced or abandoned services, services that face varying degrees of competition, and bundled or negotiated services.

¹¹ My 1997 testimony cited several studies of the effects of price caps, from which I then concluded, "[T]he evidence to date regarding price caps and related forms of incentive regulation is largely favorable," though I noted some exceptions. Kwoka Testimony, "Implementing Price Caps" at 45. My research with price caps since then leads me to the same general conclusion.

¹² As I noted in my testimony, the FCC in its first review of the LEC price cap plan "acknowledged an error in the original calculation of productivity and raised the new X factor" accordingly. Kwoka, "Implementing Price Caps," p. 43.

quickly enough to address any initial flaws in the plan—quickly enough, that is, to prevent persistent windfalls to the firm that harm consumers, or persistent revenue shortfalls that damage the producer.

Second, plans generally provide for longer-term periodic reviews of performance to make any “mid-course corrections” in the price index or in the X, Y, or Z factors. As I have noted, these adjustments help restore correspondence between price and costs and thereby lengthen the period of time of acceptable plan performance. For all the reasons noted before, it is crucial to this effort to avoid unduly compromising the firm’s incentives to conserve on costs. This need for balancing has generally resulted in a review cycle of about four to five years.¹³ In addition, the review criteria are often broader than simply the margin between price and cost, thereby providing scope for policy to strike an appropriate balance between conflicting objectives.

Finally, there also is considerable attention to the concern that price caps by themselves may discourage quality improvements and even create incentives to reduce quality. Both anecdotal evidence and several economic studies suggest that indeed quality might suffer from pure price caps.¹⁴ An important corollary finding of these studies, however, is that price cap plans that are accompanied by administrative controls and standards for quality can be effective in forestalling any decline in quality. It therefore has been possible to construct a plan with such controls that achieves the plan purposes without jeopardizing quality.

The next section of this declaration will bring this framework and observations to the

¹³ Kwoka, 1993, pp. 738-741.

¹⁴ Ter-Martirosyan and Kwoka, “Incentive Regulation, Service Quality and Standards in U.S. Electricity Distribution,” *Journal of Regulatory Economics*, 2010. Sappington reports mixed effects of price caps on several dimensions of service quality in telecom in a series of articles. *See*, for example, “The Effects of Incentive Regulation on Retail Telephone Service Quality in the United States,” *Review of Network Economics*, 2003.

experience of the Postal Service under price caps.

III. EXPERIENCE WITH PRICE CAPS FOR THE POSTAL SERVICE

The Postal Service has operated under a price cap plan for its market-dominant services since 2007. In this section, I first describe its key features. I then provide an assessment of performance under price caps and conclude with some implications for regulation of the Postal Service going forward.

A. The Price Cap Plan for the Postal Service

The key features of price caps for the Postal Service are set out in the legislation. Prices for “market-dominant” products are subject to “an annual limitation on the percentage change in rates...equal to the change in the Consumer Price Index for All Urban Consumers unadjusted for seasonal variation over the most recent available 12-month period.” Other provisions specify that this limitation applies at the service class level, authorize use of previously unused rate authority, and require maintenance of high quality service standards. The legislation also provides for rates above the cap “extraordinary or exceptional circumstances.” 39 U.S.C. §3622(d).

In terms of the features of price cap plans in general, this modern system of rate regulation for the Postal Service can be said to have initialized prices at their 2007 levels, reflecting the scale of operation at that time. It permits price increases according to changes in CPI-U, without adjustment for changes in productivity or for exogenous costs. In addition, there is on-going administrative oversight of service quality, but without any explicit mechanism in the Postal Service’s price cap formula to adjust for service quality.

From the outset, however, there have been at least two characteristics of the Postal Service that complicated the use of price caps for its services. The first of these is the lack of a residual claimant. In economics, a residual claimant is the person or entity that has legal rights to residual income of the enterprise after all other required payments--to workers, suppliers, etc.--are made. The importance of the residual claimant is that its interest in maximizing what it obtains leads it to insist on profit-maximization by the enterprise. Absent that, the firm's behavior becomes less oriented toward maximizing efficiency. But the Postal Service is not a profit-maximizing entity. There are no owners, apart from, technically, the Treasury Department or the federal government, but those really are overseers rather than residual claimants in any meaningful sense. As a result, standard economic theorems about the regulated firm's behavior under price caps--including the resulting efficiencies--may not automatically apply to a government-owned and price-capped enterprise.

That said, it is important to recognize that other forces may help counter this lack of a residual claimant. One such force might involve a compensation system for senior managers of a government-owned enterprise that provides rewards for achieving certain efficiency goals, thus replicating the incentives of a residual claimant. Another possible force is simply the existence of a public-spirited management determined to follow the legal or regulatory mandates with respect to efficiencies, akin to what a residual claimant would insist the entity to pursue. And certainly, a public with an interest in the continuation of a viable and healthy Postal Service to provide mail service throughout the nation may exert its political pressure. Any of these forces may help sustain behavior similar to that with a true residual claimant.

The second complicating factor is that the cost structure of the Postal Service does not provide as much opportunity for achieving cost efficiencies of the magnitude as generally the

case of other price-capped entities. Clearly, if its cost structure is not really under its control, no amount of incentives will matter since costs could not change much in response. A GAO study cites the Postal Service to the effect that “its strategies to increase efficiencies and reduce costs by adjusting its network, infrastructure, and workforce and to retain and grow revenue are currently constrained by statutory, contractual, regulatory, and political constraints.”¹⁵ The elements of its cost structure that impede efforts by the Postal Service to reduce its costs include labor contracts, work rules, and constraints on its ability to close facilities. While most firms face some constraints, these would seem to cover a larger fraction of the Postal Service’s cost structure than in the case of most firms.¹⁶

Despite these problematic aspects to the use of price caps for the Postal Service, the actual price cap plan that was implemented under PAEA could have resulted in postal rates tracking changes in its underlying costs of service reasonably well and certainly moving along the same trajectory as overall consumer prices over time. The reality, however, has been quite different. I discuss the reasons for this in the following section, after which I offer my recommendations for improving price cap regulation for the Postal Service.

B. Performance under Price Caps at the Postal Service

The price cap plan for the Postal Service since 2006 has been disrupted by three forces that, together, have resulted in substantial underperformance of the plan and now the critical need for reconsideration. Here I begin by analyzing these factors and the manner in which they have fundamentally altered Postal Service operations and performance, and then based on this

¹⁵ “U.S. Postal Service: Financial Challenges Continue,” General Accountability Office, January, 2016 (GAO Report).

¹⁶ There are other potentially problematic aspects of Postal Service operation, but they are not unique to it and therefore I will not comment on them. Notable among these is its operation in both competitive and non-competitive markets.

analysis, turn to my recommendations.

The first factor has been the requirement that the Postal Service fully prefund its retirees' health benefits for decades into the future by setting aside \$5 to \$6 billion per year. This cost responsibility--apparently unique for public or private entities--has required the Postal Service to generate billions of dollars each year in revenues above and beyond those required to cover its normal operating costs. This amount has comprised about eight percent of its annual budget in recent years—an enormous added burden for any entity, much less one with limited revenue-generating opportunities. The Postal Service has sought to meet these congressionally-mandated obligations from current revenues and from its borrowing authority.¹⁷ As the latter has been exhausted, however, the pressure on its current revenue stream has increased and, indeed, in the past two years, the Postal Service has technically been unable to meet its full obligations to the retiree benefits fund.

The second factor has been the unrelenting decline in mail volumes, particularly high margin First-Class Mail. This has been the result of diversion of payments to electronic alternatives, first in evidence in the early 2000s and increasing during and after the financial crisis of 2007-2009 and great recession that followed. These forces have now reduced First-Class Mail volumes by 40 percent since its peak in fiscal year 2001,¹⁸ and represent a fundamental shift in the operational and financial foundation of the Postal Service. It is not a coincidence that the Postal Service began running consistent deficits in fiscal year 2007, and as First-Class Mail volumes continue to decline, there is no reason to expect these deficits to shrink or reverse.

¹⁷ This borrowing, from the U.S. Treasury, is capped at \$15 billion, with an annual limit of \$3 billion.

¹⁸ GAO Report at 3.

Price cap plans are devised for circumstances with more ordinary variation in product demand and the resulting revenues. Demand declines are especially troublesome for operations like the Postal Service whose cost structure involves substantial scale economies, that is, a very large fixed cost component. Quantity reductions in the presence of high fixed costs result in higher average total cost as those fixed costs are distributed across fewer units. The result is that the price cap formula, designed for modest variation in quantities, produces prices below average total costs when, as with the Postal Service, demand declines precipitously.

A further complicating factor has been that while volumes of some products of the Postal Service have been growing, those are relatively more labor intensive than those with declining volumes. This demand shift has therefore not compensated for the reduction in scale economies suffered by the Postal Service, and further exacerbated its financial difficulties.¹⁹ The principle example of such relatively labor-intensive products has been package services, which have grown as a result of e-commerce. While this growth has generated added revenues, package services have actually required some increases in workforce rather than offsetting the loss of scale economies in its First-Class service.

A third factor has been the PAEA's implementation of price caps on certain services that were at the time priced at levels below their variable or attributable costs. Prominent among these services were Periodicals and Standard Flats. It is contrary both to economic efficiency as well as to good business practice for goods or services to be priced less than their attributable costs. It is certainly inconsistent with price caps and with the on-going viability of a price capped firm for its prices to be initialized as such levels. Rather, prices for Periodicals and

¹⁹ GAO Report at 4.

Standard Flats should have been set at their corresponding variable costs and incorporated into the initial price cap at those levels.²⁰ The consequences of not doing so are that the Postal Service has borne annual losses in hundreds of millions of dollars from its constrained prices for Periodicals and additional hundreds of millions of dollars for its constrained prices for Standard Mail Flats. These losses—totaling about a billion dollars—represent an initial plan defect and an on-going burden for the Postal Service.

The Postal Service has confronted these forces with several measures intended to reduce its costs. These measures, some of which are still in the process of being implemented, include the following:

(1) A substantial reduction in work force and compensation. It lowered workhours by 34 million and compensation and benefits by \$599 million in FY 2011. In 2012, workhours declined by another 27 million, employee headcount by 27,000, and compensation by \$621 million. Similar numbers were true in 2013 and 2014, but those measures all rose in 2015 as a result of the growth in the shipping business.

(2) Consolidation or closure of 229 mail processing centers²¹

(3) Modification of certain service quality standards. For example, the Postal Service proposed the elimination of overnight delivery for single-piece First-Class Mail and a delay for much of First-Class Mail from 2-day delivery to 3-day delivery.²²

(4) Deferral of scheduled investments, including, until quite recently, its truck fleet.²³

²⁰ The reasons for this situation are examined in *Periodicals Mail Study: Joint Report of the United States Postal Service and Postal Regulatory Commission*, released September 2011.

²¹ See Docket No. N2012-1, Advisory Opinion on Mail Processing Network Rationalization Service Changes, September 28, 2012, at 46 (Advisory Opinion on Mail Processing).

²² *Id.* at 1.

²³ Statement of the Postmaster General and Chief Executive Officer, Megan J. Brennan before the House Oversight and Government Reform Committee Hearing “Accomplishing Postal Reform in the 115th Congress—H.R. 756, the

(5) Restructuring of retail facility operations by closing over 3,600 post offices and substituting alternative postal service access channels, such as Automated Postal Centers.²⁴

The Postal Service estimated that its Mail Processing Network Rationalization Plan would save as much as \$2.0 billion annually²⁵ and that its Retail Access Optimization Initiative would save \$516 million annually.²⁶ Although the Postal Regulatory Commission was doubtful about these estimates,²⁷ it would appear that at least some of the projected savings would be achieved.

Although cost reductions have certainly been required and some have undoubtedly been achieved, one concern is with the manner in which the binding financial constraint may have altered those cost savings. In particular, the Postal Service may have been forced to conserve on immediate cost expenditures in trade for higher future costs. The focus on short run considerations may have played a role, for example, in the Postal Service's failure to replace the postal truck fleet on its scheduled timetable. While this may have conserved on current expenditures, this deferred investment strategy has likely increased both current maintenance costs as well as future costs of replacing the vehicles. One indication of this is the Postal Service's capital expenditures, which have declined in each year starting in 2007 and continuing through 2105, again likely reflecting the need to defer normal expenditures.²⁸ Such deferrals would only be undertaken under conditions of a binding short term financial constraint.

Postal Service Reform Act of 2017", U.S. House of Representatives, February 7, 2017, at 7-8.

²⁴ See Docket No. N2012-2, Advisory Opinion on Post Office Structure Plan, August 23, 2012 (Advisory Opinion on POSTPlan).

²⁵ Advisory Opinion on Mail Processing at 90

²⁶ Advisory Opinion on POSTPlan at 14.

²⁷ Advisory Opinion on Mail Processing at 90.; Advisory Opinion on POSTPlan at 17-18.

²⁸ Financial Analysis of the United States Postal Service Financial Results and 10-K Statement, Postal Regulatory Commission, March 2016.

It should be noted that these efforts by the Postal Service have had some effect in restraining, but certainly not eliminating, its operating deficits. Over the past five years, its operating losses have totaled \$3.7 billion, that is, less than one billion dollars per year, on annual revenues of just under \$67 billion. In fact, the Postal Service operating budgets have shown small surpluses in 2014 and 2015, after deficits in the preceding three years. As shown in Table 2 in the Public Representative's comments in Docket No. PI2016-3, the Postal Service's net overall losses in each year are the result of the large assigned costs of retiree benefits.²⁹ These annual charges of between \$5 and \$6 billion have converted small annual operating losses (or in some years, small surpluses) to annual deficits averaging more than \$5 billion.

The Postal Service has initially met most of these annual funding obligations through drawdowns of its borrowing authority, but that authority has now been exhausted. The Postal Service has had to resort to two measures to satisfy its obligations and improve its revenue stream. First, it has had to defer some recent payments to the retiree benefits account. Quite obviously, this technical method of meeting the current requirement puts yet further pressure on its future revenue sources. Secondly, the Postal Service has invoked the provision of law that allows for price increases outside the cap under "extraordinary or exceptional circumstances." This provision was granted for the fiscal year 2014 and led to a 4.3 percent temporary surcharge. It was responsible for estimated revenue increases of \$1.4 billion in 2014 followed by \$2.1 billion in 2015 and \$1.1 billion in 2016.³⁰ These added amounts helped in reducing the shortfall of net revenues, but by themselves were not enough even to pay for the \$5 billion in future retiree health benefits that accrued in each of those years. The expiration of this exigent

²⁹ Docket No. PI2016-3, Public Representative Comments, June 15, 2016, at 15 (Table 2).

³⁰ GAO Report at 8.

surcharge in 2016 has lent considerable further urgency to addressing the Postal Service's precarious financial circumstance.

It should also be noted that during this difficult financial period, the Postal Service has, not surprisingly, struggled to maintain service quality levels. The statutory service quality requirements are stated in terms of speed of delivery and reliability, and actual performance standards are routinely measured.³¹ For 2015, no First-Class Mail products met their service performance targets, in several cases continuing a shortfall of several years duration. For 2016, while standards were generally still not being met, improvements were reported in several categories.

As noted earlier, price cap plans generally have some incentives to reduce quality in order to lower cost, but in the present case these shortfalls seem more likely the result of the financial difficulties of the Postal Service and the need to conserve on current expenditures. Deferred vehicle replacement, workforce reductions, and capital expenditure cutbacks are all suggestive of a setting where service quality as well as everything else has been pre-empted by the overriding need for cost cutting. Service quality would appear to be an issue of on-going concern.

C. Implications of Past Experience for the Application of Price Caps to the Postal Service

As this review makes clear, these last ten years under price caps for the Postal Service have been extremely difficult. My analysis of these difficulties leads me to the following major conclusions:

First, there is nothing inherently inconsistent or incompatible in the use of price caps for

³¹ See Docket No. ACR2015, *Annual Compliance Determination*, March 28, 2016, at 87-95.

Postal Service rates. Indeed, relative to traditional rate regulation, price caps have much to recommend them--pricing regularity, price flexibility, incentives for efficiencies, and administrative ease.

Second, the Postal Service appears to have responded to price caps largely as might be hoped, with respect to its costs. The Service has lowered costs consistent with a binding price cap constraint, although, as noted, with possible distortions due to the urgency of its financial circumstance.

Third, the Postal Service has also responded as might be predicted with respect to service quality. A number of service categories have seen persistent quality shortfalls, most likely the result of the effort to conserve on current costs.

Fourth, with the exception of rates for two services, the initial parameters of the formula for price caps at the Postal Service appear to have captured its operating costs reasonably well. Absent the uneconomic prices for those services and the outside factors that have adversely and dramatically affected its operation, the use of price caps would likely have resulted in prices that roughly appropriated costs during these past ten years.

Fifth, the key reasons for underperformance of the Postal Service are the burden of having to make full current payments on retirees' future health benefits, the sharp decline in mail volumes due to electronic diversion and the recession, and the on-going non-compensatory prices for Periodicals and Standard Flats.

From this assessment, I conclude that the underperformance of the Postal Service under the present formula does not imply that price caps for the Postal Service are unworkable, or that the Service has failed to respond to the present plan and its circumstances. It is, however, my conclusion that the present plan has fundamental deficiencies that require correction and that the

present course is not financially sustainable. Indeed, it already has taken the Postal Service into territory that, if it were a private enterprise, would require fundamental changes in strategy to avoid reorganization.

Crucial to my assessment is that fact that the Postal Service's difficulties have largely been the result of a plan design that was structurally at odds with the major forces that altered its operations and finances almost immediately with the launch of this plan in 2007. For those reasons, I conclude that with appropriate modifications price caps for the Postal Service are viable and represent the best alternative for regulating postal rates for market dominant products.

In the next section I address the remaining question: precisely how to revise the problematic aspects of the price cap plan to deal with these issues in a manner consistent with the mandate and responsibilities of this ten-year review.

IV. REVISING PRICE CAPS FOR THE POSTAL SERVICE

This ten year review is intended to focus on the extent to which modern regulation for the Postal Service that is, price caps has achieved specified objectives. These objectives are set out in the statute at 39 U.S.C. §3622(b) and may be summarized as follows:

- (1) Maximizing incentives to reduce costs and increase efficiency
- (2) Create predictability and stability in rates
- (3) Maintain high quality service standards
- (4) Allow the Postal Service pricing flexibility
- (5) Assure adequate revenues to maintain financial stability
- (6) Reduce administrative burden and increase rate-making transparency

- (7) Enhance mail security and deter terrorism
- (8) Establish a just and reasonable schedule for rates and classifications
- (9) Allocate institutional costs appropriately between market dominant and competitive products.

Neither the statute nor the Commission's ANOPR ranks these objectives in terms of their importance. However, from the standpoint of price cap theory, one of them would seem to be a necessary condition for all of the others to have any relevance at all. That one is financial stability. After all, without financial stability--that is, viability--the entirety of the enterprise is at risk, so that all of the other specific objectives become moot. Thus, I will begin by addressing the need to ensure the financial viability of the Postal Service. After that, I will offer some comments on the other objectives that are within the scope of my expertise.

A. Preserving Financial Viability

Under price cap theory, the initial price caps are expected to cover the level of average total costs prudently incurred at the time they are implemented. As I have noted, the current precarious financial state of the Postal Service is largely the result of three major factors that are not integrated into the parameters of the initial plan. These three factors are the mandatory annual prefunding of retirees' future health benefits, the precipitous decline in First-Class Mail volumes, and the non-compensatory prices for Periodicals and Standard Flats. I take up the first two before discussing non-compensatory prices.

(1) The mandatory prefunding requirement should be recognized for what it is--an exogenous lump sum revenue requirement imposed on the Postal Service. It is not a current economic cost of operation of the usual sort that the price cap formula is designed to cover. In terms of the formula set out above, this is a Z factor--an exogenous lump sum revenue

requirement. If such costs are to be recovered from revenues generated by capped prices, then the price cap formula should include those costs separately from the operating costs that are the focus of the plan. Only in this manner can the Postal Service have a reasonable opportunity to recover both operating costs and these exogenous costs.³²

That did not happen at the point when price caps for the Postal Service were instituted. Rather, prices were initialized at levels that did not contemplate the mandatory prefunding costs. That resulted in a formula that was likely to cover operating costs, but certain to fall short of total costs that included the prefunding requirement. As subsequent events have demonstrated, the plan design was destined to failure. That must be remedied.

(2)The second factor that by itself would have created a revenue shortfall is the increased burden of fixed costs of the Postal Service due to the large and persistent decline in mail volumes, especially with respect to First-Class Mail. First-Class Mail volume has fallen by 40 percent since 2000. With the inherently high fixed cost structure of postal distribution, reductions in quantity of these magnitudes result in significantly higher average fixed costs. Price cap formulas are not designed with the expectation of substantial increases in average costs due to exogenous declines in demand and quantity. As a result, the initial price cap formula for the Postal Service produced a series of prices that did not capture these exogenous shifts in demand and unit costs, and yielded revenues that fell short--well short--of rising average costs.

As with the prefunding mandate, it is not some inherent inability of price caps in principle to deal with this issue, nor some failure of the Postal Service to respond to the problem

³² There are, of course, other ways of recovering these fixed costs, but I do not analyze them here. I also note that the dollar amounts will henceforth be determined differently. Instead of scheduled payments, the remaining unfunded liability is to be amortized over 40 years, resulting in an estimated annual payment of about \$2.6 billion. While still large, this is a reduction from that owed by the Postal Service for the first ten years of the plan.

or to the formula, that has led to its current predicament. Rather, it is because the initial plan was not designed to deal with the extraordinary demand shifts due to electronic diversion beginning in the 2000s. The increase in average fixed costs due to declining mail volumes is an exogenous cost factor—that is, a Z factor--in the meaning of the price cap framework.

While the magnitudes of these two problems are substantial, I believe that changes in the design of price caps should improve them going forward. One of these changes would correct the manner in which future retirees' health benefits are treated under the plan.³³ That change would be to add the annual dollar amount of the prefunding mandate as a Z-factor to the formula (stated in per-unit terms). That simple change would reflect the fact that the Postal Service is being required to raise that dollar amount in revenues from its services.

The second formula change is equally straightforward. Since exogenously declining mail volumes increase average unit costs, the formula should include as a Z-factor a term that adjusts price annually by the amount of the average cost increase resulting from declining volumes. A companion declaration by Dr. Timothy Brennan sets out a straightforward adaptation of the price cap formula that addresses this issue.

I should emphasize that both of these changes are thoroughly consistent with the theory and practice of price cap regulation. They simply reflect the need to tailor this specific plan to the particulars of the Postal Service and its markets, much as has been done in other applications of price cap plans. Once these changes are in place, price caps can, in general, be expected to track expected costs of the Postal Service better and re-establish incentives for it to conserve on costs.

³³ In this, I assume that the Postal Service will continue to be required to fully fund such benefits. That is, I do not assess, and do not imply agreement with, the rationale for this allocation of costs.

(3)The third problem adversely affecting the financial situation of the Postal Service is the non-compensatory pricing for Periodicals and Standard Flats. In both cases prices should be reset to their respective per-unit variable cost in order to eliminate the economic inefficiency and financial penalty associated with below-cost pricing. In the case of Standard Flats, this can be achieved within the present overall cap for Standard Mail class; once the Standard Flats rate is increased appropriately, at least some other rates within that class would need to adjust downward in order for the class to remain within the cap. Given the multiplicity of other rates, that would not likely pose any difficulty.

In the case of Periodicals, the same remedy is not feasible. The entire class is non-compensatory and so there is no opportunity for rebalancing of rates to accommodate a price increase. While there may be other solutions to this problem,³⁴ perhaps the most straightforward is for the Commission simply to reset Periodicals rates at fully compensatory levels and to re-initialize the cap at those levels—essentially restarting the Periodicals class at rates that do no more than cover attributable costs. This after all, is what arguably should have been done at tout outset when price caps for the Postal Service were launched.

What is clear is that unless some action is taken to recover the attributable costs of Periodicals and Standard Flats, the Postal Service can continue to provide such services only by overcharging for other services and/or by reducing service quality and investments in its overall operations. Those strategies have proven harmful to the Postal Service’s operations and harmful as well to economic efficiency. This is the opportunity to correct the error in pricing under the original cap.

B. Meeting Other Objectives

³⁴ Alternatives include direct subsidization of Periodicals, or combining Periodicals with some other class.

Several other matters should also be addressed in the revision of the price cap plan. Here I list and discuss three.

(1) The Postal Service's borrowing authority needs to be restored. Ordinary businesses need access to capital for longer term investments and to tide them over during temporary market setbacks. The Postal Service instead has been obliged to use its borrowing authority simply to help cover its current costs, and most especially its obligations to the retirees' future health fund. But that borrowing authority has now been exhausted, its investment funds diverted to its urgent financial problems, and longer term plans postponed indefinitely. Since no price cap plan will restore its borrowing authority, that can only be done by actions that directly relax the borrowing constraint that it now faces.

(2) Quality of service needs to be improved and quickly restored to the existing benchmarks. Quality has suffered from the diversion of operating revenues to financing the retirees' fund, so that a revised price cap plan that addresses that issue should help prevent further quality erosion. Beyond that, it may be possible to strengthen incentives for improving quality. Right now, the primary consequence of failing to achieve these benchmarks appears to be a requirement that the Postal Service analyze the causes and report its findings to the Commission. A more direct approach might reward achievement of--or at least improvements toward--certain benchmarks with a mechanism for bonuses for key personnel or more generally an upward adjustment to the price cap.

(3) Finally, the ten-year interval for a review of the price cap plan under the PAEA is unusually long by the standards of price caps, and what has happened is a lesson as to why that is generally excessive. Design defects and changed circumstances contributed to financial problems for the Postal Service, and the formula was not subject to the necessary revision for a

decade (except for the modest temporary surcharge), during which time there has been persistent harm to both postal consumers and to the service. I would strongly urge the plan, as adjusted, be subject to review after four years. This is considerably shorter than the first review period, but that period has been much longer than in other price cap plans, and demonstrably too long. That is especially the case to the extent that this proceeding introduces significant changes in the price cap plan going forward.

V. Conclusion

This proceeding provides an opportunity for a mid-course correction to the modern system of regulation instituted under PAEA in 2007. While that system was and remains fundamentally sound, certain flaws in its initial design as well as subsequent events have conspired to harm the Postal Service and its customers. Moreover, the present trajectory is manifestly unsustainable. Fortunately, three relatively straightforward modifications of the current price cap plan—all consistent with its fundamentals and analogous to changes periodically made in other such plans—would serve to remedy these problems and put price cap regulation for the Postal Service back on an efficient and sustainable path.

VERIFICATION

I, John Kwoka, declare under penalty of perjury that the foregoing is true and correct.

Executed on March 20, 2017

A handwritten signature in blue ink, appearing to read "John Kwoka". The signature is written in a cursive, flowing style with a large initial "J" and a distinct "K".

EXHIBIT 1

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Previous Academic Positions:

Professor of Economics, George Washington University, 1981-2001
Columbian Professor, 2001
Research Professor, 2001-2003
Faculty Associate in Public Policy, George Washington University, 1983-2001
Visiting Professor of Economics, Harvard University, 1994-95
Visiting Associate Professor of Economics, Northwestern University, 1980-81
Assistant Professor of Economics, University of North Carolina at Chapel Hill, 1972-75
Instructor, Lecturer in Economics, University of Pennsylvania, 1970-72

Previous Non-Academic Positions:

Member, Advisory Council to the Competition Commission of Mauritius, 2012
Guest Scholar, Amsterdam Center for Law and Economics, University of Amsterdam,
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ENCORE Fellow, University of Amsterdam, 2003-09
Fellow, Center for Business and Government, Kennedy School, Harvard, Summer 2000
Founder and Co-Director, GWU Research Program on Industry Economics and Policy,
1996-2001
Guest Scholar, Brookings Institution, 1995
Special Assistant to the Chief, Common Carrier Bureau, Federal Communications
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Economist, Economic Policy Office, Department of Justice Antitrust Division, 1985
Economist, Bureau of Economics, Federal Trade Commission, 1975-81
Economic Policy Fellow, Brookings Institution, 1975-76

Previous Professional Positions:

General Editor, Review of Industrial Organization, 2001-04
Vice President, Southern Economic Association, 2000-02
Senior Research Scholar, American Antitrust Institute, 2000
Associate Editor, Journal of Industrial Economics, 1990-95, 1998-2001
Editorial Board, Review of Industrial Organization, 1983-2001
President, Industrial Organization Society, 1998-99
Board of Editors, Journal of Media Economics: 1987-96
Advisory Board, Antitrust Law and Economics Review: 1985-90

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Ph.D. in Economics, University of Pennsylvania, 1972
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Rensselaer Polytechnic Institute, 1963 (transferred)

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"Regulation American-Style: Heavy-Handed, Light-Handed, and (Sometimes) Off-Handed," March 1990.

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"Accounting for Losses: The Great Detroit Newspaper War," GWU Department of Economics Discussion Paper D-8809, February 1988.

"Antitrust Policy and Foreign Competition," GWU Department of Economics Discussion Paper D-8711, November 1984.

Other:

AAI Award for Best Antitrust Book of the Year, 2016

Jerry S. Cohen Award for Antitrust Scholarship, 2014

ABA Antitrust Section Economics Grant Program recipient, 2012-13

Distinguished Service Award, Industrial Organization Society, 2012

Principle organizer and Chair of Local Organizing Committee, International Industrial Organization Conferences, Northeastern University, 2003, 2006, 2009, 2011, 2013, 2015

Award for Meritorious Service, Federal Trade Commission, 1980

Numerous interviews, quotations, and references in business and popular press.

Appearances before congressional and state legislative bodies.

Pro bono work on antitrust and regulatory matters.

Membership in:

American Bar Association Antitrust Section
American Economic Association
European Association for Research in Industrial Economics
Industrial Organization Society
International Competition Network
Southern Economic Association

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